REMARKS

The claims have been amended to more clearly define the present invention. More specifically, the eddy current brake includes apparatus for adjusting the eddy current induced in the member through lateral movement of the moveable linear array of permanent magnets as a function of velocity.

In addition, specific features of the present invention have been added by claims 9-13 which include the Halbach arrays positioning of the Halbach arrays for controlling braking force and further defining the actuator as alternatively including pneumatic actuator and an electric motor. In addition, in claim 13 the lateral movement has been more clearly defined as equivalent to a one-half of wavelength in order to minimize breaking force. None of the claim amendments amounts to the introduction of a new matter inasmuch as these features were originally discussed in the specification beginning at line 10 on page 17 through line 22 on page 18.

In the final Office Action, the Examiner rejected claims 1-2 under 35 USC 102(a) as being anticipated by WO 03/043865 which is the equivalent of U.S. Publication 2004/0262103.

In this rejection, the Examiner states that WO 03/043865 discloses all the limitations of the claims including a fixed linear array 16 of permanent magnets; a moveable array 18 of permanent magnets disposed in a parallel relationship with the fixed linear array of permanent magnets; a diamagnetic or non-magnetic member 70 disposed for parallel movement between the fixed and moveable linear arrays of magnets; an apparatus for adjusting braking force against the member parallel to the movement by a parallel movement of the moveable linear array of permanent magnets.

The claims as now drafted find basis in parent U.S. Patent No. 6,659,237 (Serial No. 09/880,353 filed June 13, 2001) which is a continuation of U.S. 6,293,376 (Serial

No. 09/447,206 filed November 27, 1999). Accordingly, the Rosner application publication number U.S. 2004/0262103 is not a viable reference.

However, assuming arguendo that the Rosner application is a viable reference, there is no anticipation of the amended claims.

Anticipation is established only when a single prior art reference discloses, expressly or under principles of inherency, each and every element of the claimed invention. RCA Corp. v. Applied Digital Data Systems, Inc., 221 USPQ 385 (Fed. Cir. 1984); *In re* Sun, 31 USPQ 2d 1451 (CAFC 1993); Advanced Display Systems, Inc. v. Kent State University, 540 USPQ 2d 1673 (CAFC 2000).

Further, the Examiner must identify wherein each and every facet of the claimed invention is disclosed in the applied reference. *Ex Parte* Levy, 17 USPQ 2d 1461 (USPTO Board of Patent Appeals and Interferences 1990).

In addition, the Applicants submit that anticipation must meet strict standards, and unless all of the same elements are found in exactly the same situation and united in the same way to form identical function in a single prior art reference, there is no anticipation. Tights, Inc. v. Acme-McCary Corporation, et al., 191 USPQ 305 (CAFC 1976).

With this criteria in mind, it is clear that there is no teaching in Rosner of apparatus for adjusting brake force as a functional velocity of the member between magnet arrays. It must be concluded that if Rosner is considered there is still no anticipation of the claims under 35 USC 102(a).

Thus, the Examiner is respectfully requested to withdraw the rejection of claims 1 and 2 under 35 USC 102(a) on the basis of the Rosner reference.

The Examiner has rejected claim 3 under 35 USC 103(a) as being unpatentable over WO 03/043865 to Rosner in view of U.S. 5,628,690 to Spieldiener. In this rejection, the Examiner states that Rosner discloses all the limitations of the instant claim with the exception to a spring actuator and therefore looks to Spieldiener, et al. for disclosing a similar device which teaches utilization of a spring to ensure proper braking application in the event of power loss. The Examiner concludes it would have been obvious to one of ordinary skill in the art at the time the invention was made to utilize a spring actuator as taught by Spieldiener, et al and a device of Rosner to provide proper brake application in the case of a loss of power thereby increasing the safety of the braking system.

The Applicant submits that the combination of Rosner and Spieldiener, et al. is improper in view of the fact that Spieldiener, et al. is non-analogous art.

To be analogous art, elements and purposes of the related art must be so related and similar to those in the art directly practiced that they would readily appeal to the mind of a person having ordinary skill in the later art. Art that is so far removed from the subject art that it would have appeal is non analogous. Orthman Manufacturing, Inc. v. Chromalloy American Corp., 210 USPQ 384 (Dist. Court C.D. Illinois 1981).

Art is not analogous to an invention "merely because both relate to the same industry". *In re* Clay, 23 USPQ 2d 1058 (Fed. Cir. 1992). "If it is directed to a different purpose, the inventor would accordingly have less motivation or occasion to consider it", 23 USPQ 2d at 1061.

In the present case, Spieldiener is not analogous art with respect to the presently claimed invention. Spieldiener is directed to a mechanical friction brakes and not magnetic brakes. Accordingly, there are no limitations of magnetic brakes disclosed. The Spieldiener, et al. patent clearly states in column 4, at line 61, "the friction created by brake fins 25 passing through brake pads 28 creates braking action that slows and eventually stop vehicle 1."

It is clear that Spieldiener teaches a braking force which is generated by powered clamping that is the action of friction pads against brake fins that is described in column 5 at lines 19 and 20. In addition, Spieldiener in describing the brake fins makes no mention of the fin material, that is they are not dye magnetical or non magnetic.

Two criteria have evolved for determining whether prior art is analogous: (1) whether the art is from the same field of endeavor, regardless of the problem addressed, and (2) if the reference is not within the field of the inventors endeavor, whether their reference still reasonably pertinent to the particular problem with which the inventor is involved. *In re* Deminski, 230 USPQ 313 (Fed. Cir. 1986); *In re* Wood, 202 USPQ 171 (CCPA 1979).

In the case at hand, while both the present invention and Spieldiener are directed to braking systems, they are not in the same field of endeavor. (1) the present invention is directed to eddy current brakes and (2) the Spieldiener reference is directed to friction brakes.

Accordingly, there is no common problem solved. The present invention solves the problem of varying braking force in an eddy current braking system which problem is totally unaddressed by the frictional brakes of Spieldiener, et al.

The Spieldiener, et al. spring cannot directly or inherently provide braking as a functional velocity. Application of common engineering logic and the most fundamental understanding of spring force and friction coefficients will lead anyone with any basic mechanical training to conclude the opposite. Here is why:

Spring force is a function of displacement of the spring coils and is described as the "Spring Constant", which is, the force required per unit distance of compression or extension. When a spring is used as the "braking force", (a term defined in the '690 patent as the means for pressing the pairs of opposed brake pads together...), in the event of a loss of power, it must first be compressed or extended condition, in order to accumulate the potential energy it will later turn to motive power. When the spring is released, it can apply only one constant value of force against that which it works. That is because the spring will have extended, (or contracted), to the point where the friction brake pad is in contact with the brake fin, where it remains. Whatever amount of compression, (or extension) remains in the spring at that position, determines the force applied. As the spring is not being acted against, (by the friction pads), to change its length, it cannot increase or decrease the force applied to the brake pads. The '869 patent make clear that the "braking force" must act in a direction perpendicular to the free fall direction. The "braking force", (i.e., spring force) cannot change, and does not change "as a function of velocity" as envisioned by the Examiner.

To wit: **Spring force formula: $F_s=kd$** Where F_s is the spring force generated, k is the spring constant and d is the distance the spring is displaced by compression or extension.

Friction force formula: $F_f=F_n\mu$ Where F_f is the friction force generated in the direction opposite the fall, which, F_n is the force normal to the friction surfaces, (the "braking force" defined by '690), and μ is the coefficient of friction.

Neither formula contains a velocity component, and thus any force generated is not a "function of velocity".

In order for the braking force to be changed as a function of velocity, it, (braking force), must depend upon the velocity to change it. Since the braking force does not change at all, and clearly has no dependency upon the velocity, the braking force does not change as a "function of velocity", or anything else.

By contrast, claim 3 of 3077 depends entirely upon changing the spaced apart relationship of the arrays, which directly changes the braking force; a braking force parallel to and opposite in direction to travel of the vehicle. In this case, braking force is the actual retarding force applied to the vehicle as opposed to the "braking force" defined and used in the '690 patent as a means to empower the movement of the friction pads. (Para. 5, L-4-9).

In view of the fact that Rosner and Spieldiener are, in fact, non-analogous art, the Applicants submit that the Examiner has not made a prima facie case of obviousness under 35 USC 103(a) on the basis of these references and therefore respectfully requests the withdrawal of this rejection.

Newly added dependent claims 9-13 further define the present invention and in view of their dependency from claim 1 are also patentable over the art.

In view of the arguments hereinabove set forth and amendment to the claims, it is submitted that each of the claims now in the application define patentable subject matter not anticipated by the art of record and not obvious to one skilled in this field who is aware of the references of record. Reconsideration and allowance are respectfully requested.

Respectfully submitted,

Walter A. Hackler, Reg. No. 27,792
Attorney of Record
2372 S.E. Bristol, Suite B
Newport Beach, California 92660
(949) 851-5010

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